Restoration of pine communities on the Kisatchie National Forest with mechanical chipping and fire.

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ABSTRACT

Lack of regular prescribed burning has resulted in the development of a significant midstory layer in many pine stands in the west gulf coastal region. The objective of this study was to compare the effectiveness thinning using mechanical chipping equipment followed by prescribed burning to burning only for restoring stand structure and composition. In April 2000, diameters were measured for tree stems greater than 5cm, while cover and frequency of other plants were recorded in six mixed stands of longleaf (*Pinus palustris*), shortleaf (*P. echinata*), and loblolly pine (*P. taeda*) on the Kisatchie National Forest in Louisiana. Half of each stand was treated with a mechanical chipper in May 2000 and the stands were burned in spring of 2001. Before treatment, pines dominated the tree layer of both chip and burn and burn only areas while hardwoods dominated the middle and understory layers. The mechanical treatment reduced the density of hardwoods in the midstory by 33% and the understory by 64%. The understory was dominated by the same species before the treatment and at the end of the first growing season. Cover of grasses increased equally on both thin and unthinned areas over the first growing season while there was no change in cover of forbs or vines. Woody understory cover, however, increased by 13% on non-thinned areas and declined by an equal amount on treated areas. Following the burns, grasses and forbs increased equally on both chipped and unchipped sites, while woody understory remained significantly lower on chipped areas.

Outcalt, K.W., and D.G. Brockway. 2004. Restoration of pine communities on the Kisatchie National Forest with mechanical chipping and fire. 2004 Meeting of the Coastal Plain Chapter of the Society for Ecological Restoration p. 16.